RUST GEOTECH INC.

Spectral Gamma-Ray Borehole
Log Data Report

Log Event A

Borehole 41-06-02

Borehole Information

Farm : SX | Tank : SX-106 | Site Number : 299-W23-142
N-Coord : 35,488 | W-Coord : 75,847 | TOC Elevation : 661.94
Water Level, ft : | Date Drilled : 3/2/1972

Casing Record

Type : Steel-welded | Thickness : 0.280 | ID, in. : 6
Top Depth, ft. : 0 | Bottom Depth, ft. : 100

Equipment Information

Logging System : 1 | Detector Type : HPGe | Detector Efficiency: 35.0 %
Calibration Date : 03/1995 | Calibration Reference : GJPO-HAN-1

Logging Information

Log Run Number : 1 | Log Run Date : 5/23/1995 | Logging Engineer: Kim Benham
Start Depth, ft.: 0.0 | Counting Time, sec.: 100 | L/R : L | Shield : N
Finish Depth, ft. : 98.5 | MSA Interval, ft. : 0.5 | Log Speed, ft/min.: n/a

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Analysis Information

Analyst : P.D. Henwood

Data Processing Reference : Data Analysis Manual Ver. 1 Analysis Date : 8/8/1995

Analysis Notes :

This borehole was drilled in 1972. There is no information indicating grout was placed in or around this borehole.

This borehole was logged in one run from the surface to 98.5 ft. The borehole was originally drilled to 100 ft. The pre- and post-survey field verification spectra showed consistent activities, but energy calibrations differed due to gain drift in the instrumentation. Spectra at the top of the borehole required recalibration for energy versus channel. Recalibration was not necessary for the last half of the spectra collected during the day.

Log data were corrected for attenuation using a 0.25-in. casing thickness. There was no fluid in the hole that required corrections.

Cs-137 and Eu-154 were the only man-made radionuclides detected in the borehole. Cs-137 occurred mainly from the surface to about 38 ft ranging in concentration from approximately 1 to 34 pCi/g. Other minor intervals where Cs-137 occurred above 1 pCi/g were at 62.5 and 98.5 ft at the bottom of the borehole. Other sporadic concentrations less than 1 pCi/g and at or near the MDA exist throughout the borehole. Eu-154 occurred at 4.5 and 7 ft in low concentrations. Sr-90 was also apparent in the zone from 4.5 to 7 ft. Eu-154, Sr-90 and Cs-137 are the primary contributors to the total and TF gross gamma activities at this depth.

The naturally occurring radionuclides (K-40, U-238, and Th-232) may be indicating a lithology change from 60 to 62.5 ft and at about 80 ft.

Log Plot Notes:

Four log plots are provided. The Cs-137 and Eu-154 concentrations are provided in separate plots to document the relative concentrations and show the shape of distribution. The error of the concentration determination is shown by the error bars representing the 95-percent confidence interval. The calculated MDA is shown on these plots as open circles. If the calculated concentration is less than the MDA, it is considered a non-detect and the concentration is not reported.

A plot of naturally occurring radionuclides is provided to permit correlation of these data with geologic information. On the Th-232 pot, the MDA value is shown as zero at some depth locations. This zero value was a result of an anomaly in the commercial spectrum analysis software which has been corrected by the vendor. Because the MDA calculation at these few points is not significant relative to the intended use of the thorium plot, the data were not reprocessed and corrected. Therefore, these data points on the plot should be ignored.

A combination plot is also included with Cs-137, naturally occurring radionuclides, total gamma data derived from the spectral gamma logging, and the latest available WHC Tank Farms gross gamma data. These plots permit the user to determine the influence of the various radionuclides on the total gamma inventory.